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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/060,487	01/30/2002	William J. Kauffman	A148 1640.1	6930

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WOMBLE CARLYLE SANDRIDGE & RICE, PLLC
P.O. Box 7037
Atlanta, GA 30357-0037

EXAMINER	
BISSETT, MELANIE D	

ART UNIT	PAPER NUMBER
1711	

DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/060,487	KAUFFMAN ET AL.	
	Examiner	Art Unit	
	Melanie D. Bissett	1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-47 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-47 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 30 January 2002 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Specification

1. The abstract of the disclosure is objected to because it should contain no more than 150 words. Correction is required. See MPEP § 608.01(b).

Claim Objections

2. Claim 47 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to claims in the alternative. Claim 47 relies on two separate claims for different limitations and thus relies on two claims together. See MPEP § 608.01(n). Since claim 19 depends from claim 1, it is suggested that "of Claim 1" in claim 47 be omitted.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: part 102, described on p. 16, line 23 of the specification. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 17-18 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claim 17 recites the limitation "the organic polymerizable monomer" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

7. Claim 18 recites a top coat that is cured by a number of methods. However, it is unclear whether the applicant intends to claim a cured topcoat (product-by-process) or whether the applicant intends to claim an uncured topcoat that is capable of curing by the cited methods. In the event that the applicant intends to claim a cured topcoat, the examiner suggests amending the phrase to "top coat *has been* cured by..." to improve clarity.

8. Claim 26 recites the limitation "the flooring substrate" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1, 3, 5-7, and 9-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Kang et al.

11. Kang discloses a plurality of colloidal inorganic oxide particles in a free-radically curable binder, which provides a creamer coating having improved water repellency, abrasion resistance, and hardness (abstract). The inorganic particles are surface-treated with a silane component (col. 3 lines 52-67). The inorganic particles have particle sizes of 1-200 nm (col. 11 lines 13-18) and are used as a colloidal sol (col. 12 lines 1-15). The surface-treating silane components are silane coupling agents, having a free-radically curable functionality and a hydrolysable silane moiety to react with both the hard particles and with the binder (col. 13 line 25-col. 14 line 10). The preferred coupling agents have acrylic and hydrolysable Si functional groups (col. 14 lines 28-32). A fluoro/silane component is a polymerizable monomer or oligomer (col. 14 line 66-col. 15 line 14) and the inorganic particles are polymerizable monomers, since both are reactive with the curable silane. The reference does not indicate that the coupling agents would react with themselves. The coatings are curable by heat, UV, or electron beam radiation (col. 21 lines 38-53). The coatings of the invention are taught as protective covering coatings (col. 21 lines 21-37), where they are applied to substrates including PET films (examples 3, 10-15). Examples show coating thicknesses within the applicant's claimed range.

12. Regarding claim 7, it is noted that the reference teaches improved hardness and abrasion resistance. Thus, the articles have properties useful as flooring wear layers.

13. Claims 1-2, 4-7, 9-19, and 24-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Mack et al.

14. Mack discloses scratch-resistant thermographic recording films comprising a topcoat having colloidal silica nanoparticles and an organofunctional silane (abstract). The organofunctional silane materials have functional groups such that they are reactive with both the silica and the binder used in the coating (col. 5 lines 38-59). Because the silane materials are reactive with the organic binder and the inorganic particles, it is the examiner's position that the coatings comprise polymerizable inorganic and organic materials. The reference does not indicate that the coupling agents would react with themselves. Since the materials form covalent bonds by condensation reactions, it is the examiner's position that the coatings are curable at least by heat. Substrate materials include PET having a thickness of 2-10 mils (col. 6 lines 25-36). The reference further teaches the use of an adhesion promoter between the coating and the substrate (col. 6 lines 36-37).

15. Regarding claim 7, it is noted that the reference teaches improved scratch resistance. Thus, the articles have properties useful as flooring wear layers.

16. Regarding claim 19, it is noted that the preamble "surface covering or surface covering component" can be viewed as an intended use for a two-layer composite. The structures of Mack's invention have the same material structure as that presently claimed in claim 1. Thus, it is the examiner's position that the use of such a material for covering a surface does not provide a patentable difference. It is the examiner's

position that the scratch-resistant materials of Mack's invention could be used as surface coverings and therefore meet the intended use of claim 19.

17. Claims 1, 4-5, 7-8, 19-21, and 24-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Laurence et al.

18. Laurence discloses a decorative top layer assembly for flooring applications, where an overlay layer with enhanced wear resistant qualities is applied to a decorative layer and a PETG layer (abstract). The PETG layer is applied to flooring substrates, including tile and wood planks [0018]. Adhesive layers may be used on either side of the PETG layer, where different adhesives may be used to accommodate different substrates [0059]. The overlay material contains a resin binder and inorganic particles, providing an organic/inorganic top coat layer (examples). The decorative layers are bonded together and then applied to the flooring substrate.

Claim Rejections - 35 USC § 103

19. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

20. Claims 29 and 30 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Mack et al.

21. It is the examiner's position that, because the reference discloses all the limitations of the claims except the glass transition and hardness properties of the top coating, the examiner cannot determine whether or not the reference inherently possesses properties which anticipate or render the claimed invention obvious. Therefore, it is appropriate for the examiner to make a rejection under both the applicable section of 35 USC 102 and 35 USC 103 such that the burden is placed upon the applicant to provide clear evidence that the respective compositions do in fact differ. *In re Fitzgerald et al.*, 205 USPQ 594.

22. In this case, the coupling agents and hard particle materials are similar to those employed by the applicants. Thus, the glass transition and hardness properties may be inherent to the coatings used in the reference. However, the glass transition temperature range claimed is above about room temperature. It would have been obvious to choose a coating having a t_g above room temperature to form a tack-free coating before cure to minimize defects. Also, coatings with the claimed hardness value would have improved scratch resistance. Thus, it would have been obvious to chose a coating having the claimed hardness values to improve scratch resistance.

23. Claims 29 and 30 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kang et al.

24. It is the examiner's position that, because the reference discloses all the limitations of the claims except the glass transition and hardness properties of the top coating, the examiner cannot determine whether or not the reference inherently

possesses properties which anticipate or render the claimed invention obvious. Therefore, it is appropriate for the examiner to make a rejection under both the applicable section of 35 USC 102 and 35 USC 103 such that the burden is placed upon the applicant to provide clear evidence that the respective compositions do in fact differ. *In re Fitzgerald et al.*, 205 USPQ 594.

25. In this case, the coupling agents and hard particle materials are similar to those employed by the applicants. Thus, the glass transition and hardness properties may be inherent to the coatings used in the reference. However, the glass transition temperature range claimed is above about room temperature. It would have been obvious to chose a coating having a t_g above room temperature to form a tack-free coating before cure to minimize defects. Also, coatings with the claimed hardness value would have improved scratch resistance. Thus, it would have been obvious to chose a coating having the claimed hardness values to improve scratch resistance. Note that Kang teaches improved hardness values but does not provide hardness values measured by the applicant's techniques.

26. Claims 20-21, 31-32, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kang et al. in view of Hensel et al.

27. Kang applies as above, suggesting that coatings be applied to PET substrates and to flooring substrates (example 4) but not suggesting that the composite of PET and the coating should be applied to flooring materials. Hensel teaches floor covering materials, where an inorganic coating is applied to a polyester sheet (abstract).

Preferred polyester supports include PET (col. 7 lines 1-13). The laminate formed may be molded to tile or other flooring substrates to form a protective covering (col. 8 lines 1-8). Since Kang is directed to forming protective coverings for a number of applications (col. 21 lines 7-20), it is the examiner's position that it would have been prima facie obvious to use the PET/coating composite in floor covering applications, as Hensel teaches. Motivation would be the formation of moldable floor coverings having improved water repellency, abrasion resistance, and hardness.

28. Regarding claim 31, note that the claimed gloss retention is not further limited by a method or time period. It is the examiner's position that the coatings of Kang's invention would retain 90% of the original gloss properties for at least a short period of time.

29. Regarding the claimed light stability color change, it is first noted that the Kang reference reports clear and low-haze coatings (examples). It is the examiner's position that the coatings would remain colorless for at least a short period of time. Also, it is noted that the reference teaches the use of stabilizers, absorbers, and antioxidants to the coating compositions (col. 17 lines 55-63). Thus, it would have been prima facie obvious to use additives to obtain the applicant's claimed light stability to improve the appearance of the coatings.

30. Claims 2-3, 6, 9-18, 29-32, and 40-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Laurence et al. in view of Kang et al.

31. Laurence applies as above, failing to teach the claimed curable overlay material comprising coupling agents, nanoparticles, and inorganic sol. Kang applies as above, teaching the use of a wear-resistant overlay coating comprising an inorganic sol of colloidal particles, a curable coupling agent, and an organic binder. The coatings are applied to a substrate, dried, and cured. Since both references are concerned with wear resistance and moisture repellency of underlying articles, it is the examiner's position that it would have been prima facie obvious to use the top coating of Kang's invention in the flooring applications of Laurence's invention to further improve abrasion resistance, water repellency, and hardness of the flooring articles.

32. Regarding the thickness of the PETG substrate, Laurence teaches that various materials and thicknesses are useful in the invention [0044]. Thus, it is the examiner's position that it would have been prima facie obvious to use a PETG sheet of any conventional thickness with the expectancy of forming a flooring structure with equally improved durability, moisture resistance, and dimensional stability.

33. Regarding claim 31, note that the claimed gloss retention is not further limited by a method or time period. It is the examiner's position that the coatings of Kang's invention would retain 90% of the original gloss properties for at least a short period of time.

34. Regarding the claimed light stability color change, it is first noted that the Kang reference reports clear and low-haze coatings (examples). It is the examiner's position that the coatings would remain colorless for at least a short period of time. Also, it is noted that the reference teaches the use of stabilizers, absorbers, and antioxidants to

the coating compositions (col. 17 lines 55-63). Thus, it would have been prima facie obvious to use additives to obtain the applicant's claimed light stability to improve the appearance of the coatings.

35. Claims 1, 3-7, and 9-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward et al. in view of Kang et al.

36. Ward teaches a flooring material comprising a PET layer, an adhesion promoting layer, and a flooring structure material [0009-0011]. The PET layer is first laminated onto a flooring substrate, and the top flooring structure is then applied to the PET layer [0014]. Flooring products include tile or sheet structures, also including solid foam layers [0024]. Since the PET structure comprises a heat sealable PET layer to aid bonding with a substrate and a primer layer to aid bonding with the top flooring structure, it is the examiner's position that the reference teaches using different adhesive layers on either side of the PET layer [0028]. The flooring structure includes a top clear coat but does not teach the applicant's inorganic/organic top coat [0030]. Kang applies as above, teaching the use of a wear-resistant overlay coating comprising an inorganic sol of colloidal particles, a curable coupling agent, and an organic binder. The coatings are applied to a substrate, dried, and cured. Since both references are concerned with wear resistance of underlying articles, it is the examiner's position that it would have been prima facie obvious to use the top coating of Kang's invention in the flooring applications of Ward's invention to further improve abrasion resistance, water repellency, and hardness of the flooring articles.

37. Regarding claim 31, note that the claimed gloss retention is not further limited by a method or time period. It is the examiner's position that the coatings of Kang's invention would retain 90% of the original gloss properties for at least a short period of time.

38. Regarding the claimed light stability color change, it is first noted that the Kang reference reports clear and low-haze coatings (examples). It is the examiner's position that the coatings would remain colorless for at least a short period of time. Also, it is noted that the reference teaches the use of stabilizers, absorbers, and antioxidants to the coating compositions (col. 17 lines 55-63). Thus, it would have been prima facie obvious to use additives to obtain the applicant's claimed light stability to improve the appearance of the coatings.

39. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ward et al. in view of Kang et al. as applied to claims 1, 3-7, and 9-38 above, and further in view of Laurence et al.

40. Ward and Kang apply as above, suggesting a method of applying a top coat to a PET layer-containing flooring substrate and curing the top coat but failing to mention the use of a PET copolymer. Laurence teaches that PETG copolymers have improved adhesion to materials including PVC without the use of an adhesion promoter [0033]. Because the base layer of the flooring structure of Ward's invention is PVC, it is the examiner's position that it would have been prima facie obvious to use PETG in place of the PET layer in Ward's invention to alleviate the need for an adhesion promoting layer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (571) 272-1068. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mdb

James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700